Division 17

SECTION 17000
SECURITY AUTOMATION SYSTEM

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this and other sections of Division 11, 16 and 17.

1.02 SUMMARY

A. Division 17 equipment shall be provided to and carried by the Division 16 contractor as a completely engineered package.

B. The Division 16 contractor is responsible for designing, providing, and installing the conduit raceway system, and the wire/cable system required for the Division 17 supplied material. This includes all on-site skilled labor, standard backboxes, junction boxes, cutting, patching, etc.

C. The Division 16 contractor is also responsible for mounting and installing all custom backboxes, including camera housings being supplied by Division 17. Division 16 will need to provide any ladders or lifts required by the Division 17 contractor during the installation and testing phase of the project.

D. The Division 16 contractor will be responsible for all Division 17 field device and headend installation and terminations. See Division 1 for additional requirements.

E. The Division 17 integrator will supply the headend equipment and field devices defined by Division 17. Division 17 will provide camera lens adjustments, system startup and documentation detailing the installation.

1.03 APPROVALS

A. Only **PREQUALIFIED** systems integrators are allowed to bid Division 17. Approval as any alternate integrator is NOT to be deemed as an acceptance of any products typically used by the integrator.
   1. **BASE BID:** Integrator.com, Inc (317) 776-3500.
   2. Alternates as approved.
   a) Approval as an alternate integrator is NOT to be deemed as an acceptance of any products typically used by the integrator.
   b) All integrators are prohibited from any substitutions or deviations from the specified intent, products, and levels of quality specified herein. Unless, as described below, the integrator has stated compliance/non-compliance on a paragraph-by-paragraph basis to all sections of Division 17 and each deviation has been approved in writing by the Owner's Project Manager as acceptable.

B. Qualifications of other Systems Integrators. Firms wishing to be pre-qualified to BID these specifications as an integrator must submit in writing, no later than 10 working days before the bid, a prequalification package including the following:

   (Responses must be on a paragraph-by-paragraph basis to the items listed below)
   1. A list of at least 10 other similar projects using industrial programmable controllers in a security application within the last 5 years. The 10 projects should be similar in size, scope, and price to this project. For each one, list the brand of equipment used, approximate values of the subsystems and technically describe their integration with

each other. If subcontractors were used, state their role in the projects.

2. The names and up to date phone numbers of the Architect, Engineer and Owner of all security applications within the last 5 years.
3. Submit an AIA-305A Contractor Qualification Statement.
4. Provide a “YES” response for compliance to each paragraph in Division 17 or a “NO” response for non-compliance to each paragraph in Division 17. If “NO”, provide an explanation of your non-compliance. Provide this as a notarized document from the Owner or President, being aware that no substitutions will be allowed after the BID.
5. State in writing, your intent to "comply fully with the requirements of this specification and to hold harmless the Design-Builder, Engineer and Owner from omissions of a casual nature that would be considered to be an implied requirement for a fully operational security automation system.”
6. A list of all outstanding OR past judgments or lawsuits against the company or owners under their current name or any previous name or business entity.
7. Company’s history providing detention control systems.
8. Organizational chart with the resumes of individuals.
9. Provide a technical proposal which indicates an understanding of the scope, quality, and technical aspects of the work and shall include the following:
   a) A technical description of the integrator’s approach to implementing each of the major systems included in the work. Interfaces with other contractor’s work, if any, must be specifically addressed.
   b) For each major system, a delineation of the tasks to be performed by the integrator’s staff.
   c) A list of major systems components, including the equipment manufacturer’s product numbers, to be used on this project. Detailed technical specifications and catalog cut sheets must accompany any proposed substitutions for the specified equipment in accordance with Division I requirements.
   d) A description of the overall system integration, which shall include a functional block diagram of the integrated system. For each functional unit shown on the diagram, the integrator shall provide a description of the functional capabilities and characteristics of the unit, including the hardware and software systems associated with the functional unit.
   e) A functional description of the software to be furnished. Software that is currently available and software that is to be developed by the integrator shall be identified.
10. A letter from the Surety Company reflecting the Surety Company’s history and experience with the Division 17 Contractor and the current bonding limit.
11. Provide a copy of the company’s Microsoft Solutions Provider certification and the names of the MCPs or MCSEs on staff.
12. Provide proof that the integrator is a Business Entity in the state in which the project resides.
13. Supply company’s low voltage alarm license/certification number for the state in which the project resides.
14. State drive time, in hours, from the closest company owned service entity with the ability to service, maintain, and upgrade project hardware and software.

C. Unless otherwise noted in the specific Division 17 section, all Division 17 Security Automation Systems components will be 100% integrated with the PLC system allowing seamless control and information gathering.

D. The Security Automation System shall be comprised of **at least one programmable controller for each floor of the building.** The system will have distributed control so there is no one point of failure for the building. The system will receive discrete inputs, and through the use of an internal control logic program, control output relay operations and perform remote control functions via the touch screen control stations.

1. The PLC shall be defined to be that which is regularly found in thousands of industrial environments controlling automated machinery and process controls.

2. Fire alarm, sound systems, environmental or custom manufactured and dedicated security control systems are not acceptable.
3. Logic control components manufactured by companies other than those expressly approved shall not be acceptable. This includes, but is not limited to, hardware manufactured by MTI, Simplex, OSS, or other integrators.
4. Further definition of the programmable controller requires the following:
   a. Over 100,000 installed systems in automated applications.
   b. Continuous manufacturing of the PLC for 25 years under the same brand name.
   c. PLC must be manufactured in a facility that meets ISO 9000 and the ISO 9001 quality standards.
   d. All parts are stocked by distributors, not including the manufacturer or systems contractor, in all 50 states. In general, the parts shall be made in America.
   e. Programming software support shall be available by 3rd party vendors without consultation of the systems integrator.

E. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein and on the drawings.

F. Related Sections: The following sections contain requirements that relate to this section:
1. Division 11 Section "Door Hardware."
2. Division 16 Section "Basic Electrical Requirements."
3. Division 16 Section "Fire alarm"
4. Division 17 (All Sections)

1.04 SUBMITTALS

A. General: Submit the following in accordance with conditions of Contract and Division 1 specification sections.

B. Product data sheet(s) for each type of product specified.

C. Shop drawings, detailing Security Automation System including but not limited to the following:
1. All drawings shall be draw to scale that detail racks, enclosures, and/or field devices. All devices shall be shown.
2. Drawings shall be provided for each field device detailing wiring and mounting instructions.
3. Drawings for the PLC configuration shall include model numbers of each component used and all required switch settings for proper operation and configuration of the system.
4. Provide all Touch screen graphical layouts. Layouts shall be created by the GUI software and shall not consist of line drawings created by CAD programs.
5. Drawings of Equipment cabinet(s) or racks shall detail the arrangement of all components installed.
6. Provide Power distribution and power loading detail drawings.
7. Provide System Riser, Intercom Riser, Ethernet Riser, Video Riser, and Remote I/O Riser diagrams. –Drawings shall include all interconnecting wiring, sizing and color-codes. Include manufacturers wire type where required.

D. Wiring diagrams, detailing wiring for power, signal and control, differentiating clearly between manufacturer installed wiring and field installed wiring. Identify terminals to facilitate installation, operation, and maintenance.

E. Submit a power system design spreadsheet of power loading for all DC power supply circuits, AC emergency circuits, AC UPS circuits, and AC normal power circuits required by the Security Automation System. The spreadsheet shall consist of each circuit, each device

controlled by the Security Automation System with each device's steady state and in-rush load, and a loading summary of all device types for each circuit. This design requires coordination with other subcontractors who provide such equipment as (but not limited to) the door locks, lighting circuits, water solenoids, and any other device controlled by the Security Automation System.

F. Any substitutions for specified equipment must be pre-approved by the Design-Builder/Engineer at least 10 working days prior to bid date. Provide complete product data, diagrams and block diagrams for substitution. Attempts by the contractor to use non-approved manufacturer's products, shall be grounds for termination of the integrator and removal of the integrator from the project.

G. Maintenance data for materials and products, for inclusion in Operating and Maintenance Manual specified in Division 1 and Division 16 "Basic Electrical Requirements." Provide complete manual material concurrently with the system submittal and provide 3 updated final versions of the manual one month before final system turnover.

H. Software files shall be turned over to the owner at completion on a CD-R disk. Software files should contain but not limited to all PLC element names, nicknames, tag names, wiring info, documentation and comments. Also, supply all software and software licenses for both build and runtime programs. (PLC, Wonderware, Video Matrix, DVR, etc.)

1.05 QUALITY ASSURANCE

A. Sole source responsibility: The integrator shall perform all work necessary for the complete and operational integration of all sections of Division 17. The integrator will assume all responsibility for the system and shall NOT subcontract or in any way use another company to develop, integrate or program any portion of the Touchscreen and PLC systems.

B. The integrator **shall not** use door control or power distribution boards. All door control and power distribution shall be accomplished using discreet din-rail mounted terminals, relays, and fuses.

C. Installer Qualifications: Engage an experienced installer who is a factory authorized service representative to perform the work in this section.

D. The security automation system shall comply with ASTM F1465 Guide Standard for Security Control Systems.

E. Integrator Qualifications: Engage an experienced integrator who is a certified Microsoft Solutions Provider. This will establish an appropriate level of capability required when using Microsoft-compatible software.

F. Electrical Component Standard: Components and installation shall comply with NFPA 70, "National Electric Code."

G. EIA Compliance: Comply with the Electronics Industries Association standards.

H. Compliance with Local Requirements: Comply with the applicable building code, state and local ordinances, and regulations and the requirements of the authority having jurisdiction.

I. NFPA Compliance: Provide systems conforming to the requirements of the NFPA 101, "Life Safety."

J. UL Listing and Labeling: Provide components specified in this Section that are listed and labeled by UL.

K. Nationally Recognized Testing Laboratory Listing and Labeling (NRTL): Provide system and components specified in this section that are listed and labeled by an NRTL. The term "NRTL" shall be defined in OSHA Regulation 1910.7.

L. Single Source Responsibility: Obtain components from a single source integrator who assumes responsibility for compatibility for system components furnished.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions, with the Installer present, for compliance with requirements and other conditions affecting the performance of the intercommunication system work.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install system in accordance with NFPA 70 and other applicable codes. Install equipment in accordance with manufacturer's written instructions.

B. Wiring Methods: Install wiring in raceway except consoles, desks, and counters.

C. Control Circuit Wiring: Install control circuits in accordance with NFPA 70 and as indicated. Provide number of conductors as recommended by system manufacturer to provide control functions indicated or specified.

D. Wiring Within Enclosures: Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars or tie wraps.

E. Splices, Taps, and Terminations: Make splices, taps and terminations on terminal strips in junction, pull, and outlet boxes, terminal cabinets and equipment enclosures.

F. Identification of Conductors and Cables: Use color coding of conductors or apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams.

G. Weatherproofing: Provide weatherproof enclosures for items to be mounted outdoors or exposed to weather.

H. Repairs: Wherever walls, ceilings, floors, or other building finishes are cut for installation, repair, restore, and refinish to original appearance.

3.03 TESTING AND DEMONSTRATION

A. The security automation system, excluding field devices, shall be assembled complete and 100% tested in the security automation system integrator's facility prior to shipment of the headend equipment to site. This includes all applicable equipment specified in all sections of Division 17 and any other component deemed necessary by the engineer to be

demonstrated. All software for all systems shall be programmed and tested. Provide a written checklist of every headend component and I/O point tested with the appropriate field device.

B. The testing shall include attachment and proper operation of a typical field device to each and every point of field device connection. While testing is demonstrated to the engineer and owner, the engineer may randomly choose field device connection points to be connected and operated. Because the system shall be 100% tested, these field devices shall operate properly.

C. The security automation system integrator shall notify the engineers and owners 30 days prior to shipment of the equipment that the test is ready and shall coordinate with them to organize the date of the demonstration.

3.04 GROUNDING

A. Provide equipment grounding connections for interconnections systems as indicated. The Motorola Standard for grounding will be used. Tighten connections to comply with tightening torque specified in UL Standard 486A to assure permanent and effective grounds.

3.05 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Provide services of a factory authorized service representative to supervise the field assembly and connection of components and the pretesting, testing, and adjustment of the system.

B. Pretesting: Upon completing installation of the system, align, adjust, and balance the system and perform complete pretesting. Determine, through pretesting, the conformance of the system to the requirements of Drawings and Specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new and retest until satisfactory performance and conditions are achieved.

C. Testing: Upon completion of pretesting, notify the Architect a minimum of 10 days in advance, of acceptance test performance schedule and conduct tests in his presence. Provide a written record of test results. This process shall be known as the "system validation".

D. Operational Test: Perform an operational system test to verify conformance of system to these specifications.

E. Inspection: Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified.

F. Retesting: Rectify deficiencies indicated by tests and completely retest work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets the Specifications and complies with applicable standards.

3.06 COMMISSIONING

A. A minimum of two of P.C.S.O. maintenance personnel to be factory trained on software applications and hardware at the integrator’s facility, before the commissioning of the building. P.C.S.O. maintenance personnel trained to perform authorized warranty repairs. Include all travel and living costs associated with this training.

B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner's Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

3.07 CLEANING AND PROTECTION

A. Prior to final acceptance, clean system components and protect from damage and deterioration.

3.08 WARRANTY MAINTENANCE

A. Maintenance Service Contract: Provide maintenance of systems and equipment for a period of thirty-six (**36)** months commencing with Substantial Completion, using factory-authorized service representatives. The integrator will not be required to replace or warrant damage due to negligence, acts of God or vandalism under their scope. The integrator will not be required to provide or diagnose problems associated with door switch or lock problems without additional reimbursement. The integrator will not be responsible for any existing field devices/equipment that is not functional for whatever reason.
   1. Basic Services: Provide a routine maintenance visit at the end of the warranty period at a time coordinated with the Owner. Adjust and replace defective parts and components with original manufacturer's replacement parts, components, and supplies.
   2. Additional Services: Perform services within the above period not classified as routine maintenance or as warranty work as described in Division 1 Section "Warranties and Bonds" when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
   3. Renewal of Maintenance Service Contract: No later than 60 days prior to the expiration of the maintenance services contract, deliver to the Owner a proposal to provide contract maintenance and repair services for an additional one-year term. Owner will be under no obligation to accept maintenance service proposal.

END OF SECTION 17000

SECTION 17010
PROGRAMMABLE LOGIC CONTROL SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this and other sections of Division 16 and 17.

1.02 SUMMARY

A. This section includes the requirements and operational characteristics for the Programmable Logic Control (PLC) System comprised of the following equipment that is 100% integrated with the Security Automation System:
   1. PLC processors, communication modules and I/O.
   2. PLC Software

B. Related Sections: The following sections contain requirements that relate to this section:
   1. Division 16 Section "Basic Electrical Requirements."
   2. Division 17: All sections of the "Security Automation System"

1.03 SYSTEM DESCRIPTION

A. The PLC System is the primary user interface to the Security Automation System. Unless noted otherwise, all user-initiated control for the system is performed through these Touch-screens.

PART 2 - PRODUCTS

2.01 SYSTEM REQUIREMENTS

A. General: Provide a complete and fully functional PLC System using materials and equipment of types, sizes, and rating, as required to meet performance requirements. Use materials and equipment that comply with referenced standards and manufacturers' standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions.

B. The programmable logic controller (hereafter referred to as the PLC) and all components in the controller system shall be the product of a company who regularly manufactures and services this type of equipment and who meets the requirements listed above. All assemblies and sub-assemblies performing similar functions in separate controllers purchased under this specification shall be interchangeable.

C. All components of the programmable controller system shall be of normally recognized industry standards and regularly sold to the industrial market. All components shall be housed in structurally sound and finished metal cabinets. All switches and other operator-controlled devices shall be of the size and durability for their intended use as is normally offered for industrial applications.

D. Modular components of the system shall be UL listed or recognized.

E. The programmable controller shall be housed in enclosures hereafter referred to as SECURITY EQUIPMENT CABINETS (SEC). The SEC shall house the following items:
   1. Input and output cards/modules related to the monitoring and control of security devices.
   2. Regulated power supplies.
   3. Surge/Lightning Protection.
   4. Terminal strips and fusing.
   5. Interposing door and lighting control relays.
   6. The programmable controller, or where applicable, transmitting and receiving modules to communicate with the PLC or remote input and output racks.
   7. The intercom amplifiers and switching relays.
   8. Other necessary items as determined by the contractor's design.

F. PLC inputs and outputs shall directly control and monitor the door control system. Direct or 'hard-wired' connections to LED's (light emitting diodes), relays and other devices are not acceptable.

G. Door Monitoring and Control: Bolt and door position switches, provided by others, shall be wired as separate inputs to the PLC. TWO INPUTS PER DOOR. The deadbolt switch, if provided will be wired in series with the bolt position switch. When the door is locked and secure, the circuits shall become intact, providing voltage to the PLC. If the door is a sliding door or overhead door, then the open and close limit switch will be wired as separate inputs to the PLC and will not be part of the sliding or overhead door control circuits.
   1. Unless otherwise stated, all electrically controlled and/or monitored doors shall be connected and controlled and monitored by the Security Automation System.
   2. All doors shall be individually fused using industrial grade fuse holder terminal blocks mounted on DIN rail. The fuse holder shall include **blown fuse indicators** for both DC and AC powered doors. Provide door control relays **with indication light and manual activation button**.
   3. Locks, whether solenoid or motor drive types, shall be controlled via mechanical interposing relays driven by the PLC. Solid-state relays are not acceptable. Provide all required power to control doors. If DC power supplies are required, the total ampacity shall be 100% greater than the worst case connected load, including inrushes. Group or emergency openings of doors shall cause doors to SEQUENTIALLY OPEN such that power supplies will not be overloaded.
   4. Interlocks shall be via software. Any door shall have the ability to be programmed to become a member of an interlock scheme. The Owner's Project Manager shall reserve the right to re-define interlocks during the submittal phase without additional costs.
   5. Upon a loss of power, all doors shall de-energize. Sliding and overhead doors shall remain in their present state.

2.02 EQUIPMENT AND MATERIALS

A. Hardware PLC
   1. Acceptable hardware PLC manufacturers: Allen-Bradley, OMRON, GE, and Modicon. Logic control components manufactured by companies other than those expressly approved shall not be acceptable.
   2. The programmable logic controller (PLC), Communication modules, and the input and output modules shall be the products of one manufacturer.
   3. Each PLC shall be password and key protected against unauthorized entry to software.
   4. Each PLC shall have a minimum of 20% expansion capability.
   5. Each PLC processor shall have an Ethernet port or an accompanying Ethernet PLC module that directly interfaces the PLC processor directly to Ethernet.
   6. Each input and output to the PLC system shall have LED indicators integrated into the input and output cards/modules that reflect the state of each input and output. I/O cards/modules shall be replaced without the need to unwire field connections. All field wiring shall remain intact on removable connectors.

7. Each PLC system shall have remote diagnostic indications. This includes PLC status and remote I/O status.
8. Provide each PLC system with the ability to be programmed remotely over a dial up connection.
9. Provide an EPROM for each processor provided.
10. Provide a 'True On-Line' UPS for **each** SEC location on each floor. Approved: Liebert GXT2-3000RT (for SEC1) and GXT2-1500RT (for SEC2, SEC3 and SEC4) or Powerware.

B. 100BaseT Ethernet Switch
1. Provide an Ethernet Switch for the PLC & Touchscreen network. Equal to NetGear FS family.

C. Spares
1. Provide 10% spare input & output capacity at the completion of the project.
2. Provide 10 locking relays & fuses
3. Provide 1 spare of each type of surge protector used on the project.
4. Provide one spare PLC of each type used, one EPROM of each type used, one backplane, each type of I/O card used, one power supply, one Ethernet card, and one I/O communication card.

D. Security Equipment Racks and Consoles
1. Equipment racks shall be AMCO or Winstead traditional styled modular free-standing units unless otherwise shown on the drawings. The division 17 contractor shall provide a complete design showing the layout of all components housed in the racks.
2. Consoles (if required) shall be AMCO or Winstead traditional styled modular units with sloped face at 37 degrees. All consoles or console assemblies must be provided with a complete, continuous writing surface with a 1-3/4" dropped ledge.

E. Surge/Lightning Protection
1. All surge protection devices shall have the lowest surge voltage rating per U.L. 1449 that is consistent with the line levels.
2. All data and video signal cables entering the facility from a point exterior to the building shall be equipped with a silicon avalanche diode type of lightning protection.
3. Protector shall be located at the first cabinet through which the cable or conductor passes upon entering the building.
4. 120VAC surge protection shall be installed on each circuit on the UPS output panel and each emergency circuit feeding security devices.
5. Approved manufacturers; Northern Technologies and Transtector.

2.03 SYSTEM OPERATION

NOTE: Any reference in this section that refers to "configured" or "programmable" shall be determined to mean programming changes that shall be made on site within 2 hours of request by the owner during the startup phase and/or the programming adjustment phase.

A. PLC Control Software
1. PLC control software shall be commercially available software developed by one of the previously mentioned acceptable PLC manufacturers.
2. The worst-case response between any input and any output shall be 250 milliseconds. This shall include when the command is sent via the communication network from one PLC to another.
3. The control software shall be fully integrated with other required operations as defined in this section.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.2 INSTALLATION

A. Field testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, & wiring as required to achieve a fully functional system.

3.3 DEMONSTRATION, TRAINING, ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

END OF SECTION 17010

SECTION 17020
TOUCHSCREEN CONTROL STATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this and other sections of Division 16 and 17.

1.02 SUMMARY

A. This section includes the requirements and operational characteristics for Security Automation System Touchscreen Control stations comprised of the following equipment that is 100% integrated with the Security Automation System:
   1. Touchscreen Computers & Monitors
   2. Touchscreen Software

B. Related Sections: The following sections contain requirements that relate to this section:
   1. Division 16 Section "Basic Electrical Requirements."
   2. Division 17: All sections of the "Security Automation System"

1.03 SYSTEM DESCRIPTION

A. The Security Automation System Touchscreens are the primary user interface to the Security Automation System. Unless noted otherwise, all user-initiated control for the system is performed through these Touchscreens.

PART 2 - PRODUCTS

2.01 SOFTWARE REQUIREMENTS

The Security Automation System Touchscreens shall have the following software requirements to allow for seamless control and future flexibility.

A. Primary Control/Secondary Control Icons:
   1. Central Control shall have the ability to view all screens of the facility with status of all devices regardless of which Touchscreen has primary control of those devices.
   2. Icons for doors, intercoms, cameras, etc, which are under primary control of Central Control (i.e. movement doors, exterior doors for sally ports, etc.) shall be displayed as standard icons as described in the sections to follow and can be controlled by Central Control.
   3. Icons, which are under primary control of the local Touchscreen, will appear on these same Central Control screens as ‘sunken’ into the screen with a passive or reverse video color. The status of DPS and LSS will be dynamically displayed as described in the sections to follow for both primary and secondary door icons. The intent is to allow Central Control to be aware of door movement in pods, booking areas, etc, while leaving control of those doors with the local Touchscreen.
   4. Local Touchscreens shall display icons of doors, intercoms, cameras, etc, which are under primary control of Central Control and will appear on these same local Touchscreen screens as ‘sunken’ into the screen with a passive or reverse video color. The status of DPS and LSS will be dynamically displayed as described in the sections to follow for both primary and secondary door icons. The intent is to allow the local Touchscreen to be aware of door movement in & out of Pod movement doors, booking

area's movement doors & exterior sallyports and the vehical sallyport, etc, while leaving control of those doors with Central Control.

B. Takeover:
   1. The Central Control Touchscreens shall have the ability to take over or disable any combination of Touchscreens.
   2. Upon taken over from Central Control, all icons under primary control of the local Touchscreen will convert from the 'sunken' icons as described above to standard icons, allowing full control by Central Control.
   3. Upon takeover from Central Control, the intercom queue from the disabled stations will rollover intact to the Central Control's intercom queue.
   4. Reference the sections to follow for further details for takeover.

C. Touchscreen Login Validation:
   1. Each Touchscreen shall require Login Validation from the Security Management Server via pop-up password screen.
   2. Login Validation will be integrated with the Security Management Server's database to allow the tracking of the operator's name for all functions at each Touchscreen station until it is logged off.
   3. If the TCS cannot communicate with the SSM, then the TCS displays a "scrambled" numeric keypad for the operator to enter a PIN code.
   4. If the PIN code is valid the operator is logged in as the current operator of the station.
   5. An operator remains the current operator until a new operator is logged in or until the TCS is taken over or disabled

D. Administration Viewing & Retrieval:
   1. An Ethernet connection shall allow the retrieval of database information from the Security Management Server's database with all reporting functions available for the PC stations via a local client and pass wording.
   2. The intercom audio files saved on the Security Management Server's database will also be available for playback via the PC stations' audio system.

2.02 SYSTEM OPERATION

A. FUNCTIONS - The Touchscreen consists of a combination of icon buttons and function buttons. The icon buttons are the DOOR ICON BUTTON, the COMMUNICATE ICON BUTTON, the CAMERA ICON BUTTON, the PAGE ZONE ICON BUTTON, UTILITIES ICON BUTTONS, PROXIMITY READER ICON BUTTON, and GROUP ICON BUTTONS. The function buttons include UNLOCK, STOP, HOLD OPEN, DOOR ISOLATE, ICOM ISOLATE, UTILITIES, INTERLOCK OVERRIDE, SILENCE, and RESET. Pressing any of these buttons will result in the Digitized Voice Interaction (DVI) announcing the action performed.

B. DOOR CONTROL - Pressing the DOOR ICON BUTTON without a menu active will result in the act of locking the door. UNLOCK, HOLD OPEN, STOP, and DOOR ISOLATE are menu functions that act with two keystrokes to make the door operate. Two-keystroke operation for unlocking a door is critical so that doors cannot accidentally be unlocked. The keystrokes required to open an overhead, sliding, or swinging door are the same. The operator will first press the UNLOCK in the menu function area which will cause the DVI to announce "unlock"; then within 3 seconds, press the DOOR ICON BUTTON on the Touchscreen at the location of the door. The door will become unlocked. Other doors may be commanded to become unlocked by pressing other DOOR ICON BUTTONS within 3 seconds of the first. After 3 seconds of no icon depressions, or when another menu function is selected, or the RESET button is pressed, the UNLOCK (or other command) cancels. After the door has unlocked for a specified amount of time, it will then relock automatically. To stop the motion of a sliding, or overhead, door, the operator will press the STOP button. Pressing the HOLD OPEN button will unlock the door and keep it electrically unlocked until the operator presses the DOOR ICON BUTTON only. The respective menu function is illuminated

during the 3-second selection process.

1. Door Control Indicators: The DOOR ICON BUTTON and a Dynamic Door Indicator (DDI) are located on the Touchscreen at each controlled door. The DDI is a graphical representation of the door. If it is a swinging door it depicts the door swing, and if it is a sliding door it displays the door as secure, in mid travel, or fully open.
   a. The DOOR ICON BUTTON is gray and the DDI is gray and is shown closed when the door is locked and secured.
   b. The DOOR ICON BUTTON is red and the DDI is gray and is shown closed when the door is powered but the lock status switch, the bolt position switch, and the door position switch are still indicating that the door is secure.
   c. The DOOR ICON BUTTON is red and the DDI is red and is shown open when the door is powered and open.
   d. The DOOR ICON BUTTON is gray and the DDI is red and is shown open when the door is not powered but is open.
   e. The DOOR ICON BUTTON flashes red and the DDI shows the current status of the door if the door is violated or opened manually.
2. Interlocked doors are bordered around their buttons in yellow when a door in a designated interlock group is un-secure. If an interlocked door is attempted to be unlocked, the DVI shall annunciate "Function not allowed, door is interlocked."

C. DOOR ISOLATE - Electrically controlled doors, or doors that are also controlled by field mounted access devices, can be isolated such that they cannot be opened. The operator first selects DOOR ISOLATE and then presses the DOOR ICON BUTTON depicting the door to isolate. Other doors may be commanded to become isolated by pressing other DOOR ICON BUTTONS within 3 seconds of the first. After 3 seconds, the ISOLATE command cancels. Repeating the process on an isolated door reverses the condition and returns the door to group or keypad control. Isolating a door that has been granted local access will automatically turn off the local access. Provide group “synchronization”. Selecting the DOOR ISOLATE function the first time will turn any DOOR ISOLATE INDICTOR in the group that is currently “ON” to its “OFF” state. Selecting the GROUP ICON button the second time will turn all DOOR ISOLATE INDICATORS in the group “ON”.
   1. DOOR ISOLATE INDICATORS: The DOOR ICON BUTTON will have a yellow "X" marked through it indicating that the door cannot be unlocked. Violations and the DDI will still be shown.
   2. Attempting to unlock an isolated door or attempting to grant inmate access to an isolated door will cause the DVI to announce, "Function not allowed. Door is isolated."

D. VIDEO - Establishing video (CCTV) communications from the control panel is accomplished by pressing the VIDEO ICON BUTTON. Pressing the VIDEO ICON BUTTON on the Touchscreen at the location of the camera will cause the button to be solid blue and the CCTV image to be displayed on the VIDEO CONVENIENCE MONITOR(S). Pressing that VIDEO ICON BUTTON again will cancel the video and return the button to its gray state. Pressing a different VIDEO ICON BUTTON will cause that camera to be active and will cancel any others.

E. COMMUNICATE - Establishing audio communications from the control panel is accomplished by simply pressing the COMMUNICATIONS ICON BUTTON at the location of the intercom station. There shall be a COMMUNICATIONS ICON BUTTON for each intercom or staff station. The audio is now connected to the remote station and the COMMUNICATIONS ICON BUTTON is green. The video of cameras viewing that area are now shown on the ALARM CONVENIENCE MONITOR(S), and audio is established; while the camera symbols that cover that intercom station are now green. If no camera is viewing that location, audio will be connected without video. Repeating the operation will cancel the call. Connecting to another station will automatically cancel the previous connection. Pressing the PRESS TO TALK allows the operator to talk to the station. The COMMUNICATIONS ICON BUTTON is used to show the state of the intercom call.
   1. If the call button, located on the staff or inmate intercom station, is pressed, and the call has not been acknowledged, the COMMUNICATIONS ICON BUTTON flashes green and the DVI will sound a ring indication until the call is connected or the SILENCE button is pressed.

2. If the call has been answered, the COMMUNICATIONS ICON BUTTON will be solid green, and all cameras called up to follow the intercom will be solid green. If another call is incoming while the first is being serviced, that COMMUNICATIONS ICON BUTTON flashes and the DVI will softly annunciate the ring indication.

F. PAGE - This feature allows the operator to select which paging zones are connected for a subsequent paging operation. The operator will first press a PAGE ZONE ICON, then the PAGE MODE button in the COMMUNICATIONS WINDOW area. All paging icons will be displayed with those not selected displayed as gray icons and those that are selected are displayed as green icons. If no PAGE ZONE ICON is selected, then the PAGE MODE button will be 'sunken in' and unavailable for use.

G. ISOLATE INTERCOM - This feature allows the operator to shut off an intercom station so that incoming calls are received, but no audible notification is given, pressing the ICOM ISOLATE button opens a 3 second window, whereupon any intercom station turned OFF or isolated is shown as a gray icon. An active intercom station is shown as a solid on GREEN icon. Subsequently pressing the icon on the Touchscreen at the intercom station alternates its state between 'OFF' (isolated) and 'ON'. An isolated intercom station is still accessible by the operator via the COMMUNICATE and AUDIO features. An ISOLATED intercom still visually annunciates. Only the ring indication is suppressed. The COMMUNICATIONS ICON BUTTON shall have a yellow "X" marked through it indicating that the intercom station has been isolated. Provide group "synchronization". Selecting the INTERCOM ISOLATE function the first time will turn any INTERCOM ISOLATED INDICTOR in the group that is currently "ON" to its "OFF" state. Selecting the group button the second time will turn all INTERCOM ISOLATED INDICATOR in the group "ON".

H. COMMUNICATIONS WINDOW - A portion along the bottom of each screen (without obstructing the floor plan) shall be allocated and used for the purpose of making the communications task easy for the operator. This window shall contain the PENDING LIST containing the text names of at least 7 incoming pending calls, the ACTIVE STATION containing the text name of the active intercom call, the CALL ANSWER button, the CALL ANSWER AND ZOOM button, the ZOOM ACTIVE button, and the CALL DISCONNECT button. This window pertains to every call assigned to the Touchscreen station and is not exclusive to the intercom stations shown on the current active screen. This window will allow the operator to answer calls without having to go to a particular screen unless it is desired to do so. Calls may be answered out of order by selecting the pending intercom station number in the PENDING LIST. .
   1. PENDING LIST - The list of 7 incoming pending calls designated for the particular Touchscreen station shall show the owner/architect-assigned text names for the oldest seven pending calls that have not been answered and in the order that they were initiated. As a call is answered, it shall be removed from the list and the list shall be automatically updated with any new incoming calls. If there are no pending calls, this list shall not be visible on the screen. Isolated intercoms shall not be displayed in the pending list.
   2. ACTIVE STATION TEXT - Any call that is active shall be displayed in this area with the owner/architect-assigned text name for the station that is active.
   3. CALL ANSWER BUTTON - Each time this button is pressed, the active station will automatically cancel and the next station on the pending list will automatically connect. If there are no pending calls, this button shall not be visible on the screen.
   4. CALL ANSWER AND ZOOM BUTTON - Each time this button is pressed, the active station will automatically cancel and the first station on the pending list will automatically connect. Also the Touchscreen will automatically go to the screen where the answered intercom station is located. If there are no pending calls, this button shall not be visible on the screen.
   5. ZOOM ACTIVE BUTTON - When this button is pressed, the Touchscreen will automatically go to the screen where the active intercom station is located. If there is no active call, this button shall not be visible on the screen.
   6. CALL DISCONNECT BUTTON - When this button is pressed, the active intercom call is disconnected.

I. QUICK ZOOM WINDOW - A portion of each screen (sized to prevent the obstruction of the floor plan) shall be allocated and used for the purpose of making screen movement tasks easy for the operator. This window shall contain a SITE button and shall be located on every screen. This window shall also show a graphical rendition of all areas of the building under that Touchscreen station's control. All screens shall be accessible with no more than two touches. Each control screen shall be graphically outlined on the QUICK ZOOM WINDOW. The QUICK ZOOM WINDOW shall contain zoom functionality, the LOCATION INDICATOR, the PENDING CALL INDICATOR, the ALARM INDICATOR and SITE button. A graphical overview of the entire site plan shall be provided by selecting the SITE button. Icons, such as PAGE ZONE ICONs and VIDEO ICONs shall be placed on this screen as needed for proper system functionality.
   1. QUICK ZOOM - Pressing an outlined area for a particular section of the facility shall cause the Touchscreen to go directly to the screen that controls the touched area. A distinctive audible sound shall annunciate when this action is performed.
   2. QUICK ZOOM LOCATION INDICATOR - The area on the QUICK ZOOM that represents the current screen shall be highlighted in white so that the operator knows exactly what screen is active in relation to the other parts of the facility. The other areas shall be gray unless pending calls or alarms are active as explained by the QUICK ZOOM PENDING CALL INDICATOR and the QUICK ZOOM ALARM INDICATOR.
   3. QUICK ZOOM PENDING CALL INDICATOR - When calls are pending from areas other than the current screen, and these calls are defined to be answered at a particular Touchscreen station, then the area of the call shall flash green and gray on the QUICK ZOOM WINDOW. If both an alarm and a pending call are active at the same time in an area, then the respective area shall flash red and green.
   4. QUICK ZOOM ALARM INDICATOR - When alarms are active from areas other than the current screen, then the area of the alarm shall flash red and gray on the QUICK ZOOM WINDOW. If both an alarm and a pending call are active at the same time in an area, then the respective area shall flash red and green.
   5. QUICK ZOOM PASSWORD RESTRICTIONS - Certain individuals are allowed access to only certain screens. The QUICK ZOOM shall display the current user's available screens in contrast with the whole site plan. Pressing the inaccessible parts of the QUICK ZOOM shall result in a message and the DVI stating "Access not allowed. Enter a password for access."

J. UTILITIES CONTROL - Utilities control is a hidden function. The operator first selects the UTILITIES function button. All the utilities then display graphically on the screen. 3 seconds later or 3 seconds after a utility button is pressed, the UTILITIES command cancels. Pressing the utility button of the utility that is to be controlled while the UTILITIES function is active will cause the utility to turn "OFF" if it is "ON" and "ON" if it is "OFF".

   1. UTILITIES CONTROL - LIGHTS - Dayroom lights can be controlled from the Touchscreen stations. The icon is used to indicate the conditions of the lights. If the lights are "ON", the icon is yellow and the background of the whole area covered by the lighting changes from gray to a lighter gray. This light gray background is also visible after the utilities menu is canceled so that the status of the lights can be viewed without the need to display a icon. If the lights are "OFF", the icon is gray.
   2. UTILITIES CONTROL - TV RECEPTACLES - TV receptacles can be controlled from the Touchscreen stations. The icon is used to indicate the conditions of the TV receptacles. If the TV is "ON", the icon is yellow. If the TV is "OFF", the icon is gray.
   3. Provide group "synchronization". Selecting the UTILITIES function the first time will turn any UTILITY in the group that is currently "ON" to its "OFF" state. Selecting the group button the second time will turn all UTILITIES in the group "ON".

K. TOUCHSCREEN CONTROL - DISABLE - Pressing this icon will immediately disable all functions of this panel. Control will be transferred to Central Control or other Housing Pod. Central Control shall also have the capability to disable and enable any remote Touchscreen by touching that graphic's icon on the central control Touchscreen.

L. TOUCHSCREEN CONTROL - SILENCE - Pressing this icon will silence the audible annunciators used to indicate a violated door, staff station request, or any other alarm.

M. TOUCHSCREEN CONTROL - RESET - Pressing this icon will cancel any door violation or other alarm condition on the active screen and/or any active menu. RESET does not affect communications calls.

N. TOUCHSCREEN CONTROL - DURESS - Pressing this icon will immediately disable all functions of this panel. Control will be transferred to Central Control or other Housing Pod and will display a duress alarm on the QUICK ZOOM and annunciate the duress at Central Control.

O. OTHER INDICATIONS:
   1. Group control is accomplished via icons located on the Touchscreen station. Group control shall be active for DOOR CONTROL, INTERCOM ISOLATE and UTILITIES CONTROL functions.

P. INTERLOCKS: Where two or more doors with electric hardware form a sallyport or where interlocks between hardware sets are indicated on the plans or specs, or will be specified by the architect or engineer at the time of submissions, the operation of the individual hardware sets shall be as follows:
   1. A yellow background behind the icon will illuminate whenever any other door of that interlock group is unlocked or unsecured, including primary or secondary control icons. This allows both Central Control and the Local Touchscreen to be aware of the status of all doors when one half of the sallyport is controlled by Central Control and other by the Local Touchscreen.
   2. Attempting to unlock a door that is interlocked will cause the DVI to state, "Denied. Door is interlocked."
   3. The controls will allow only one of the hardware sets to be in the non-secured condition at any given time unless the interlock bypass function is activated. The operator must press the INTERLOCK OVERRIDE icon prior to unlocking a door, via the UNLOCK icon in the DOOR CONTROL menu area, to defeat the interlock.
   4. When the INTERLOCK OVERRIDE icon is pressed, a yellow pop up message box will be displayed with a written warning and the DVI will warn the operator of the danger associated with interlocks. The DVI warning must play in its entirety before the first level confirmation icon is displayed.
   5. A second and larger yellow INTERLOCK OVERRIDE warning box will then appear with a written warning. A second DVI warning must play in its entirety before the second level confirmation icon is displayed.
   6. Only after the second confirmation is made will the interlock indications be removed from the screen.
   7. Once any door icon is pressed, the interlock override function will cancel. If no door icons are pressed with in 10 seconds of the second confirmation, the interlock override function will cancel. Also, the function can be canceled at any time by pressing the ‘CANCEL’ icon.

Q. EXTERIOR DOOR CONFIRMATION: The Touchscreen shall require two-touch (confirm) operation for openings of exterior doors. After the UNLOCK command and the exterior door is selected, a pop-up box shall be displayed that the door is an exterior door and a security risk.

R. Emergency Door Release Operations: Located on the SIDE MENU of selected Touchscreens is a button labeled as EMERGENCY. Pressing the EMERGENCY button will access the Emergency functions list.
   1. When the RELEASE ALL button is pressed, a red pop up message box will be displayed with a written warning and the DVI will warn the operator of the danger associated with an Emergency Door Release. The DVI warning must play in its entirety before the first RELEASE button is displayed. The operator may select the CANCEL button to terminate the door release procedure, or press the RELEASE button to proceed to a second step.

2. After the RELEASE ALL button is pressed, the operator can scroll through all screens to see which doors are to be unlocked. Each door that will be unlocked will be marked with the letter "E" in black on the door icon.
3. A second, red EMERGENCY DOOR RELEASE warning box will then appear. A second DVI warning must play in its entirety before the second RELEASE button is displayed. The operator may select the CANCEL button to terminate the door release procedure, or select the RELEASE button to proceed to a third step.
4. A third, red, full screen EMERGENCY DOOR RELEASE warning box will then appear with a written warning. A third DVI warning must play in its entirety before the third RELEASE button is displayed. The 'CANCEL' button will be a minimum of 1/3 the size of the viewable screen. The operator may select the CANCEL button to terminate the door release procedure.
5. After the third RELEASE button is pressed, the background around the RELEASE ALL button shall flash and the DVI shall continuously announce "Emergency Evacuation."
6. All doors of the configurable EMERGENCY DOOR RELEASE route will open. Those doors that are unlocked under the emergency door release, will display an "E" alternating from black to red on the door button.
7. Other Touchscreen stations also monitoring or controlling the same doors as the station initiating the release will have an EMERGENCY DOOR RELEASE ACTIVE indication located on their screen and will alarm and flash as described previously.
8. When the RELEASE GROUP button is pressed, a red pop up message box will be displayed with a written warning. The operator will at this time select (via pressing one or more GROUP ICON buttons) the door release groups that shall be added for release. Each door and group that will be unlocked will be marked with the letter "E" in black on the door icon and group icon. The operator may select the CLOSE button to terminate the door release procedure, or select the RELEASE button.
9. After the RELEASE button is pressed, the GROUP ICON button shall flash RED and the DVI shall continuously announce "Emergency Evacuation". The GROUP ICON button shall now include the text 'CANCEL' and the operator shall be able to cancel the evacuation of a particular group by pressing a particular GROUP ICON button or canceling ALL Group evacuations by pressing the CANCEL button on the pop up box.

S. EMERGENCY LOCK DOWN: Provide an icon with the other Emergency Functions on the SIDE MENU, which shall lock all doors in the facility and shall disable the use of all prox readers in the facility.

T. When the loss of AC power is detected and the PLC reverts to UPS or emergency power, an indication labeled EMERGENCY POWER shall flash and the alarm shall sound.

U. MISCELLANEOUS
1. Each Touchscreen station shall be configurable to be able to control part or all of the facility.
2. To move to another part of the facility, the operator can simply zoom to it (if the Touchscreen station is configured to do so). Zooming or paging to a new screen and the status indicators on the screen shall be instantaneous. When an alarm condition occurs in an area that is not currently displayed, the Touchscreen will present this information to the operator. This information includes the status of doors in other areas, duress alarms, panic alarms, and other conditions desired by the owner.
3. Floor plans must be displayed on the Touchscreen in the orientation of the station in the real world. Example: Doors in front of the operator will be displayed at the top of the Touchscreen; doors behind the operator will be displayed at the bottom of the Touchscreen.
4. On the CONFIGURE MENU, a 'TEXT DISPLAYED' selection shall be available so the operator may select between architectural text and owner text with one touch.
5. On the CONFIGURE MENU, a SIDE MENU LOCATION button shall be provided so that the SIDE MENU can be alternated between the left and the right side of the screen, depending if the operator is left or right-handed.

V. OCCURRENCE LOG
1. Entry of new occurrence logs
   a) User can enter text via the attached keyboard or option of using the software keyboard
   b) Software keyboard shall include all standard keys including, shift, caps lock, backspace, enter, and arrow keys
   c) As characters are pressed on the keyboard they should be displayed in the appropriate field
   d) The software keyboard shall have a close button
   e) The software keyboard shall hide after 10 seconds of inactivity, or any alarm, such as door violation, duress, etc.
   f) Press the submit button to save the entered text to the SMS computer
   g) After submitted, status should indicate that the text has been sent and saved successfully, and the title and log fields should be cleared. If the text is not sent and saved successfully, the status should indicate “Log Entry Failed,” and the title and log fields should not be cleared.
   h) Press clear button to clear title and log fields
   i) Press view log book button to view previous entries within the last 24 hours
   j) Occurrence log entry shall be capable of 3800 characters
2) Viewing previous entries
   a) Shall be capable of viewing 100 logged entries
   b) The retrieval time shall be less than 10 seconds
   c) Press the view log entry button to return to the new occurrence log entry screen
3) All data shall be logged by the SMS.
4) The OCCURRENCE LOG function shall be available by selecting the LOG button on the SIDE MENU.

2.03 TOUCHSCREEN CONTROL STATIONS:

A. The Touchscreen stations shall consist of 19" or 17” high-resolution color flat panel LCD monitors (as called out on the plans), analog capacitive Touchscreens, and PC compatible computers. The Touchscreen must operate simultaneously with a mouse so that the user can use either the Touchscreen or the mouse without reconnections, switches, or system re-boot. The stations shall be connected through a network that complies with requirements for IEEE 802.3 for 10BaseT Ethernet and 100BaseT Ethernet. 10BaseT is required so that other members of the network are not subject to problems associated with wiring or Ethernet ports of other network members. The PLC shall also be a member of the Ethernet network and communicate to all Touchscreens. All Touchscreens shall communicate directly to the PLC independently of one another, and no one Touchscreen shall cause any other Touchscreen to not function. Server configurations where one computer serves as the communications server to the PLC are not acceptable.

   Acceptable manufacturers:
   1. IBM
   2. NEC
   3. Sony

B. Touchscreen Overlays: Touchscreen overlays shall be of the analog capacitive technology with 1024 touch points resolution. Linearity shall be less than +/- 1% error with a drift offset of no worse than +/- .5% anywhere on the screen. Mean Time Between Failures (MTBF per MIL-HANDBOOK-217D) for the controller shall be greater than 176,000 hours and a touch life in any one location of 20 million touches. Connection from the Touchscreen to the computer shall be bi-directional asynchronous RS-232C or Universal Serial Bus with data rates selectable from 110-19,200 baud. The Touchscreen software driver shall be Windows 2000/NT compliant with the ability to exchange data with other Windows applications using the Dynamic Data Exchange (DDE) interface protocol. The Windows 2000/NT environment is essential to future development and integration of the system. OS/2, MAC OS, and Linux are not acceptable. The Touchscreen driver shall allow the touch area to activate upon release from the Touchscreen only. (Commonly called liftoff mode.)

   Only acceptable manufacturers:

1. Microtouch
2. Approved equal

C. Touchscreen Computer: The computer shall be at a minimum 100% IBM compatible, Pentium IV, 1.8Ghz w/512K cache, 256MB of 100MHz SDRAM, 20GB hard drive, two serial ports, 1 parallel port, 2 USB ports, 10/100BaseT network card for Ethernet operation as described in paragraph A, 32X max. CD-ROM drive, 32 bit multimedia sound card, 8MB video accelerator, MS IntelliPoint mouse on a PS2 or USB port, 3.5" FDD, and running Windows 2000/NT. Use of the PC speaker is not acceptable. All computer requirements are minimums. Each Touchscreen computer shall have
   Acceptable manufacturers:
   1. Gateway
   2. Dell
   3. Compaq

D. Touchscreen Configuration Software: The Touchscreen configuration software shall be non-proprietary. The Touchscreen shall be developed using a standard Windows and Windows DDE based industrial software package that is regularly used in industrial applications and 100% compatible with the industrial PLC specified. The configuration software must compatible with the PLC programming software. The configuration software manufacturer must have the facilities and a regular schedule for training so those individuals who receive the training will have the ability to develop or modify the Touchscreen configuration. The Touchscreen station is for operator interface only. All control functions are to be controlled by PLC software.
   Acceptable manufacturers:
   1. Wonderware
   2. Rockwell RS View w/RSLinx

E. Digitized Voice Interaction (DVI): The system shall incorporate digitized voice software and hardware to integrate with the Touchscreen so that all operator actions, system warnings, system emergencies, and other pertinent information are announced to the operator through an audio card operating on the PC's bus. Executing the DVI sound shall not prevent the operator from performing any screen functions, and the operator will not have to wait for the sound to be completed before proceeding to other screen functions (except for emergency features). Within a system utilities screen the operator shall be able to choose a female voice or a male voice. The operator shall also be able to choose full voice interaction or partial voice interaction. Full voice interaction uses voice during all screen operations while partial voice interaction uses beeps and chimes during normal operations and uses voice for all announcements and alarm conditions. This audible feedback shall be selectable between male voice, female voice, or a tone.

F. PASSWORDS - The Touchscreen shall have 1000 passwords and 1000 different levels of security. The Owner shall have an administration password that enables the Owner the ability to alter passwords and password levels. The Owner shall be able to change the administration password.

G. Touchscreen Network Connections: The Touchscreen stations shall be connected through a network that complies with requirements for IEEE 802.3 for 10BaseT/100BaseTX Ethernet.

H. Touchscreen Lock Box: The Touchscreen stations shall be enclosed in tamper resistant, lockable case. Enclosure shall have a pre-wired, filtered fan assembly; pre-wired AC power cord; vented sides; conduit knockouts, one internal & one external fused convenience outlets; and two grommeted cable ducts. Provide vertical or horizontal models as coordinated with the owner.
   Acceptable manufacturers:
   1. Pelco LB2000

I. Touchscreen Integration: The Touchscreen is only an operator interface to the system. No control logic is allowed in the Touchscreen computer. All control logic is to be through the PLC. Touchscreen stations must be able to control the same points and be able to be integrated into the same control system.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.02 INSTALLATION

A. Field testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, & wiring as required to achieve a fully functional system.

3.03 DEMONSTRATION, TRAINING, ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

END OF SECTION 17020

SECTION 17050

SECURE GATEWAY SYSTEM

PART 1 - GENERAL

1.1 Summary

A. This section includes the requirements and operational characteristics for a hardware and software solution whose purpose is to provide a “more than reasonably” secure connection between the owner provided network connection and the security network. The Secure Gateway System (SGS) includes:
   1. Virtual Private Network.
   2. Multiple Firewall Appliances.
   3. Seamless security intranet accessibility.

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 System Description

A. Provide a fully integrated and seamless Secure Gateway System, offering a “more than reasonably” secure network against unauthorized access from outside the security intranet.

B. **The Division 17000 integrator shall take on all liability for unauthorized access to the PLC Ethernet network, if this specification is not strictly adhered to.**

PART 2 - PRODUCTS

2.0 Software Requirements

The Secure Gateway System shall have the following software requirements to allow for seamless access and future flexibility.

A. The Secure Gateway Systems shall interface to the SMS via an Ethernet network using a Firewall protected and encrypted VPN connection using 168-bit or greater encryption.

B. The SGS shall provide security from unauthorized access to the security network, by constructing a virtual private network (VPN) between the security network and the owner network. Only those clients with access to the private network shall have access to the security network.

C. The SGS shall provide the pathway for remote users (owner network) to access the Security Management System (Data Logger) (SMS) and/or Occurrence Log via their HTML interfaces.

D. Access to SMS functionality will still require the use of SMS login authentication.

E. SGS shall only allow HTTP traffic on port 80, to / from the owner network to / from the security network.

2.1 System Features

A. The SGS hardware and software shall be upgradeable to allow for changes in protection technologies.

B. The SGS shall not allow direct passing of information, but will interface directly to the SMS computer

C. The SGS shall act as a physical barrier between the owner network and the PLC(s).

D. The SGS shall provide authentication, and encryption required to ensure the integrity of data traveling between the owner network and the security network using the Triple-DES

algorithm (168 bit).

E. The Owner shall be responsible for upgrades / training after the warranty period.

2.3 Equipment and Materials

Provide all necessary equipment for an operational Secure Gateway System, consisting of, but not limited to the following. Note: Hubs, switches and routers alone shall not be acceptable.

A. Minimum of three hardware firewall appliances from independent vendors.
B. VPN / Firewall Appliance minimum requirements
   1. Integrated Security Appliance w/low latency and high throughput IPSec encryption
   2. 10BastT Ethernet port
   3. IKE and IPSec VPN Standards
   4. 3DES (168-bit) VPN encryption
   5. Network Address Translation (NAT)
   6. Port Address Translation (PAT)
   7. DHCP Server
   8. RADIUS Support
   9. PpoE Support
   10. Terminal based and web based Administration
   11. Certified by ICSA Labs 4.0
C. Only Acceptable Manufacturers
   1. Netscreen
   2. Cisco
   3. Global Technology Associates (GTA)

PART 3 - EXECUTION

3.0 Quality Assurance

A. Quality Assurance shall be as described in Section 17000.

3.1 Examination

A. Verify that surfaces and areas are ready to receive work.
B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.
C. Verify that required utilities are available, in proper location, and ready for use.

3.2 Installation

A. Field testing and inspection will be performed under the provisions of Section 17000.
B. Replace equipment, components, and wiring as required to achieve a fully functional system.

3.3 Demonstration, Training, and Acceptance

A. Demonstration, training, and acceptance shall be as described in Section 17000.

END OF SECTION 17050

SECTION 17100
AUDIO COMMUNICATION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for an Audio Communication system, which is an integral part of the Security Automation System. Audio Communication systems included are:
   1. Inmate intercom.
   2. General and emergency paging.

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 SYSTEM DESCRIPTION

A. Provide a PLC-based intercom system, which is fully integrated with the Touchscreen system. This system shall allow any intercom to be answered by the Touchscreen in primary control of that particular area, or by Central Control during a 'take-over' situation.

PART 2 - PRODUCTS

2.1 SOFTWARE REQUIREMENTS

The Audio Communication System shall have the following software requirements to allow for seamless control and future flexibility.

A. Provide all software and hardware necessary to allow audio recording to the SMS of Touchscreen audio communications to intercoms, speakers, horns or other Touchscreens.

B. Audio recording shall be transparent to the Touchscreen user both in Touchscreen responsiveness and audio quality.

C. Dual Talk Path (see 17020)

D. Primary Control/Secondary Control Icons (see 17020)

E. Takeover: intercom rollover (see 17020)

2.2 SYSTEM FEATURES

A. The audio system will be free from any 'popping', 'cracking' or 'humming' at all times.

B. Each intercom station shall be annunciated on any Touchscreen in primary control of that intercom's area.
   1. When a station is off, the icon shall be gray.
   2. When a station initiates a call to the control panel, the icon shall flash green and be accompanied by a distinctive audible tone through the Digitized Voice Interface (DVI).
   3. When a station is on, the icon shall be green and the audible tone associated with the call shall be off. When there is a camera monitoring the location, the associated camera icon shall turn green.
   4. The intercom station's audio shall be driven through the Touchscreen computer

speakers. Audio from the Touchscreen condenser microphone to the intercom station shall only be active while the Touchscreen push-to-talk push button is depressed.

5. At the Owner's discretion, any intercom station shall be programmed such that if the button mounted on the station is pressed and held for two seconds (or a time to be determined by the owner), a duress is alarmed at the corresponding Touchscreen. The Owner shall be allowed to select, during the submittal phase of the project, any station to be programmed for this feature.

C. The paging system shall have the capability of reaching individual areas of the facility, or the entire facility.
   1. Paging is a menu selection within the communicate menu area. The operator may select paging zones through selecting paging icons within a 3 second window of time.
   2. A paging zone will include the sleeping room intercom stations as part of its network.
   3. Paging zones shall be grouped logically and final zone configuration shall be coordinated with the owner.
   4. Provide an 'All Page' icon for all intercoms, speakers, and horns in the Touchscreens primary control. Central Control shall page the entire building.

2.3 EQUIPMENT AND MATERIALS

The basis for most of the audio functions in this specification is a PLC-based intercom system. Provide all necessary I/O for an operational intercom system.

A. Intercom stations shall be a Dukane model 4A1485. Speaker is cone type, water and flame resistant and also protected by five barriers from flame or liquids with three of the barriers consisting of metal plates with strategically positioned holes for speaker cone protection. Approved Equal: Quam CIS4/25

B. Ceiling mounted speaker assemblies shall consist of a Lowell 8C10W-25 speaker, a Lowell SQLK-8 baffle and a Lowell P875X backbox for recessed-mount applications and Lowell CB84 backbox for surface-mount applications.

C. Speaker horns shall be a Dukane model 5A30.

D. Distributed Switch Banks shall be a Dukane model 9A1825.

E. Talk-back amplifiers shall be a Dukane model 9A1875B.

F. Paging amplifiers shall be a Dukane model 1A4125.

G. Thru-the-wall communicators shall be a Haven Technology model # SC-100.

H. Spares:
   1. Provide three spare intercom stations.
   2. Provide one spare speaker.
   3. Provide one spare visitation handset.

PART 3 - EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field-testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, and wiring as required to achieve a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance and operator personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.

B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner’s Project Manager within one year after the date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17100

SECTION 17200

VIDEO COMMUNICATION SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for a Video Communication system, which is an integral part of the Security Automation System. Video Communication systems included are:
   1. Camera system
   2. Video switching system
   3. Video recording system

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 SYSTEM DESCRIPTION

A. Provide a Video Communications System to allow:
   1. Video communication of persons desiring passage through remote openings.
   2. Remote monitoring of areas which are not under continuous staff supervision.
   3. Remote monitoring of all inmate housing units, food services areas and laundry.
   4. Recording of booking procedures, as well as the potential for up to ten (10) other cameras in the facility as directed by the Owner.

PART 2 - PRODUCTS

2.1 SOFTWARE REQUIREMENTS

The Video Communication System shall have the following software requirements to allow for seamless control and future flexibility.

A. The video system shall be configured such that any video input can be displayed on any video output.

B. Central Control shall have the ability to assign any multiplexer main output to any monitor to allow owner flexibility in the use of the system.

2.2 SYSTEM FEATURES

A. The video system shall be integrated in such a way as to eliminate any ‘rolling’ of video images.

B. Program the system multiplexers with room name (coordinate with Owner) for every camera.

C. The video system shall be configured for automatic camera call-up for:
   1. Connected intercom calls.
   2. Door violations on roof hatches and exterior doors.
   3. Duress alarms

D. Power to each camera shall be individually fused for the ease of trouble shooting and maintenance of individual cameras.

2.3 EQUIPMENT AND MATERIALS

The basis for the specification is Pelco or Philips (Bosch Security Systems).

A. Cameras
   1. Pelco CC3701H-2 or Bosh Dinion LTC0455/20 shall be used for all interior camera locations as called out in the plans, EXCEPT where shown in cells, elevators, and exam rooms. Provide auto-iris lenses for all cameras.
   2. Extreme CCTV EX36C corner mount camera shall be used in cells, elevators, and exam rooms.
   3. Pelco High Resolution, self focusing, CC1400HZ16-2 or Samsung SCC-C4301 1/4", shall be used for all exterior locations.

B. Lenses
   1. Provide Pelco 13VD2.8-12 series auto-iris lenses for all cameras.

C. Monitors (Provide all necessary racks or mounts as required)
   1. Samsung 151MP 15" LCD CCTV monitors shall be used where 15" monitors are called for.
   2. Samsung 171MP 17" LCD CCTV monitors shall be used where 17" monitors are called for.

D. Matrix switcher
   1. Philips model LTC-Eighty Eight Hundred Series Switcher/Controller System.
   2. Philips model LTC8555 & LTC8557 Keyboard and remote interface where CCTV Keyboards are called out on the plans.
   3. Provide all necessary inputs & outputs for cameras and monitors. Also, multiplexer main outputs shall be inputs to the switcher.
   4. Provide all necessary expansion bays or satellite switches and associated hardware for any monitor to view any input.

E. Viewing
   1. Philips model QD104C, Color Looping Quads, where called out in the plans.

F. Camera Housings
   1. Pelco EH3512-1 with heaters, blowers, and sunshield for all exterior "fixed" cameras. Provide Pelco EM1450 mount.
   2. Provide Pelco HS 8080 High Security ceiling housing for all interior, non-cell cameras.

G. Accessories
   1. Provide Pelco MCS Series – Indoor rated power supplies. The power supplies shall provide 24VAC outputs for 4, 8 or 16 cameras. The power supplies shall be sized according to the current requirements of cameras connected to the system and shall be sized at 2, 5, 10 or 20 Amp capacities.
   2. Provide Silicon Avalanche Diode (SAD) surge protection for all data and video cables entering the facility from a point exterior to the building. Approved manufacturers; Transtector and Northern Technologies.

H. Spares:
   1. Provide one spare fixed camera of each type used.
   2. Provide 5 spares of each type of fuse used.

PART 3 - EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

B. The integrator shall provide a block-switching table that incorporates all requirements of the intercom, video call up and alarming specified in all other sections of this division. The Owner shall maintain the right to request modifications at any time during the warranty period at no charge.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field-testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, and wiring as required, achieving a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, programming, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.
B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.
C. Occupancy Adjustments: When requested by the Owner’s Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17200

SECTION 17240

DIGITAL VIDEO RECORDING SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for a Digital Video Recording System, which is an integral part of the Security Automation System. Digital Video Recording systems included are:
   1. Digital Video Recording (DVR) equipment.
   2. DVR equipment accessories.
   3. Remote viewing computer in the shift commander's office.

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 SYSTEM DESCRIPTION

A. Provide a Digital Video Recording System to allow:
   1. Continuous Digital video recording of **all** the cameras in the CCTV system.
   2. Configuration, viewing of recorded images, and ability to record incidents to CD-R discs.

PART 2 - PRODUCTS

2.1 SOFTWARE REQUIREMENTS

A. Software for the DVR System shall enable seamless control and allow for future flexibility.

2.2 SYSTEM FEATURES

A. The DVR system shall be initially configured by the integrator, and coordinated with the Owner, to configure system parameters according to the operation of the facility, taking the needs of all cameras (down to an individual basis) into consideration.

B. All DVRs in the system shall be networked together over an Ethernet interface.

C. DVRs at the head-end rack(s) shall be able to be configured locally through the use of a rack-mount keyboard/mouse/monitor and a KVM switch and all necessary accessories for proper operation.

D. A PC with remote viewing software shall be provided to allow simultaneous access via Ethernet to live and recorded video, provide for system configuration and the recording of incidents to CD-R discs.

2.3 EQUIPMENT AND MATERIALS

The basis for the specification is Pelco. The following manufacturers are also acceptable provided equipment is in full compliance with all technical and specification requirements as specified herein: Sensormatic Intellex series. Exceptions to the technical specifications will not be accepted.

A. 16-CHANNEL DVR

1. Provide Pelco model number DX8016-750 digital video recorder. Provide multiple digital video recorders (as required) to provide recording for the total number of cameras in the CCTV system.
2. This product shall be manufactured by a firm whose quality system is in compliance with the I.S./ISO 9001/EN 29001, QUALITY SYSTEM.
3. The digital recorder specified shall be a 16-channel, Windows 2000-based system.
4. The recorder shall provide full screen or selectable multi-screen displays of 2x2 (quad), 3x3, and 4x4 formats.
5. The recorder shall be capable of sequencing the 16 camera inputs as four quad displays.
6. The date/time, recorder name, and camera name shall be stored with each image recorded.
7. The recorder shall provide 16 video inputs with independently configurable frame rate settings (ips).
8. The digital recorder shall be capable of recording at the following images per second (ips) rates:
9. Up to 120 ips (1 to 4 cameras) or up to 80 ips (5 to 16 cameras) with one compression card installed.
10. The recorder should use temporal compression based on proprietary MJPEG and H.263 technology.
11. Image integrity shall be maintained using proprietary codec, time/date stamp, watermark authentication.
12. The recorder shall be capable of providing simultaneous recording and playback.
13. The recorder shall provide five independently configurable motion detection zones per camera.
14. The recorder shall provide a function to bookmark a specific time and date of a video file for easy retrieval at a later date.
15. The recorder shall provide pre and post alarm recording.
16. The recorder shall provide both local and remote pan/tilt/zoom control.
17. The system shall provide the following minimum TV Lines of Resolution (TVL) as related to the digital memory resolution:
18. 450TVL at 640H x 480V; 280TVL at 320H x 240V; 120TVL at 160H x 120V
19. The recorder shall include a CDRW unit.
20. The recorder shall provide a SCSI-2 interface connection to allow video archiving to a disk array.
21. The recorder shall include a 3.5 Floppy drive.
22. The recorder shall provide input for sixteen (16) programmable, N/O, N/C dry alarm contacts.
23. The recorder shall provide sixteen (16) programmable output relays.
24. The recorder shall provide the capability to load a bitmap image of a facility, then drag and drop camera and alarm icons to create an overview of the installation thereby allowing an operator to click on the camera icons to view video from the selected camera.
25. The recorder shall be capable of recording single channel audio.
26. The recorder shall include remote viewer Graphical User Interface (GUI) software to allow simultaneous access via Ethernet to live and recorded video. This software shall also provide system configuration and pan/tilt control supporting up to sixteen (16) recorders.
27. The recorder shall have remote administrator configuration capability.
28. Each camera input shall be configured to record 10 fps, 320 x 240 resolution, 100% motion, with a minimum of 10 days of on-line storage.

B. 16-Channel DVR Accessories

1. Provide one or more KVM switches sized for the number of 16-channel digital video recorders in the system. Approved KVM switches: Tripp Lite B005-004-R (4-port) and Tripp Lite B007-008 (8-port). Provide KVM Switch cable kits as required.

C. Rack-Mount LCD Keyboard Drawer
1. Provide 1U Rack Mount LCD monitor keyboard drawer with 15.1" TFT, keyboard and touch pad equal to Acnodes Model KD5150.
2. Keyboard and Touch Pad:
a. a. Sunrex PS/2 84 keys keyboard and touch pad.
3. LCD Panel:
a. Size: 15.1"
b. Display Area: 304.1(H)x228.1(V) 15.0" diagonal
c. Resolution: 1024 x 768
d. Colors: True colors 16.7M (8bits color)
4. Stereo Speaker:
a. 2 x 2Watts Stereo speakers
5. Connectors
a. 1 x D-Sub 15 pin (female) for VGA
b. 2 x P/S 2 for Keyboard and Mouse
c. 1X Audio in
6. Security Lock
a. Cover lock for system security
7. Drawer Design
a. High load-rating slide rail with angle bracket extension up to 30" depth
8. Power Supply
a. Industrial level Auto-switching 40W power supply for 90V~264V AC input
9. Operation Temperature shall be 0 to 55 degree C (32 to 131 degree F)
10. Weight shall be 37lb
11. Dimension shall be 17.13"(W) x 23.6"(D) x 1.65"(H)

D. Remote Viewing PC
1. Provide a remote viewing PC station with the following specifications:
a. CPU: 2.0 GHz minimum
b. Memory: 128MB
c. Storage: 40GB Hard Drive
d. VGA Card: Must support resolution of 1024 x 768 true color
e. Video Memory: 64MB
f. O/S: Windows® 2000
g. 1.44MB 3.5" floppy diskette drive
h. 100 Mb base-T network adapter
i. 48x/24x/48x CD-RW Drive
j. Approved manufacturers: Dell, Gateway
2. Provide a 15" LCD Flat panel Monitor
3. Provide a 100BaseT Ethernet network switch (16-port).
4. Provide 50 CD-R discs for the recording of incidents.

PART 3 - EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

B. The integrator shall provide a block-switching table that incorporates all requirements of the

intercom, video call up and alarming specified in all other sections of this division. The Owner shall maintain the right to request modifications at any time during the warranty period at no charge.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, and wiring as required, achieving a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, programming, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.

B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner’s Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17240

SECTION 17300

ACCESS CONTROL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for an Access Control System.

B. Provide all equipment and materials for installation. After configuration by the Owner, provide testing and validation labor to verify proper dry contact interface and integration.

1.2 SYSTEM DESCRIPTION

A. Where required, provide access stations. Upon correctly entering a personal ID code or by presenting a valid proximity card or keyfob, the system will provide an authorized entry.

PART 2 – PRODUCTS

2.1 SOFTWARE REQUIREMENTS

The Access System shall have the following software requirements to allow for seamless control and future flexibility.

A. The Access Control System shall be integrated with the Security Management Server's database allowing prox reader ID code to be logged by the SMS upon any use of an access device.

B. The Access Control System shall integrate with Touchscreen system to visually alert operators when a door has been accessed via the card reader system and allows the operators to isolate individual card readers to prevent access.

C. Each use of a reader shall be validated by the access system.

D. The Touchscreen shall be able to disable any individual reader. The SMS shall be able to log requests at doors with a disabled reader.

E. The access system shall <u>not</u> directly open any doors. It shall make door open requests of the PLC. The PLC shall verify interlocking of the requested door and status of the proximity reader prior to any opening.

2.3 EQUIPMENT AND MATERIALS

A. Provide HID Prox-Pro, 5355AGN series, proximity readers where shown on the plans.

B. Provide 300 HID 1346 proximity keyfobs to owner.

C. Provide Northern Computers N1000-4X, 4-reader panels, as required for the quantity of readers on each floor.

D. Spares:

1. Provide one of each type of proximity reader used.

PART 3 – EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on Drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, and wiring as required to achieve a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, programming, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.

B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner’s Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17300

SECTION 17400 - DURESS/MISCELLANEOUS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for an officer duress system and other miscellaneous systems, which are an integral part of the Security Automation System.

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 SYSTEM DESCRIPTION

A. Duress: Provide duress stations as shown on the contract documents. Each duress location will annunciate separately at the Touchscreen(s).

1.3 SOFTWARE REQUIREMENTS

The Duress/Miscellaneous System(s) shall have the following **software requirements** to allow for seamless control and future flexibility.

A. Duress

1. All duress alarms shall be annunciated on the local Touchscreen(s) and Central Control. The Owner shall have the option of having a duress alarm annunciate on all Touchscreens at no additional cost.
2. A duress alarm shall only be able to be reset at the duress station location, requiring direct intervention of the staff. The Central Control touchscreen shall only be able to silence the annunciation.

1.4 SYSTEM FEATURES

A. Duress

1. Under-the-counter duress stations shall be located in the facility for the officers to depress. Inputs from these stations are connected to the Inputs cards of the PLC.
2. Duress receivers shall be located in the facility for the officers to activate with their own buttons located on each person. Inputs and outputs from/to these stations are connected to the I/O cards of the PLC.
3. Duress stations are normally hidden on the Touchscreen. They are displayed during an alarm condition only.
4. Upon activation of a duress alarm, the DVI shall continually annunciate “DURESS” until the Touchscreen is SILENCED. The Site Plan shall flash in red the area in which the duress occurred to allow quick identification for the officer to select that screen.
5. When the area is shown full screen, the duress icon shall flash in red at a rate of one time per second at the location of the active duress station. Multiple duress stations will be shown individually, but shall only require one silence activation.
6. When the local Touchscreen presses RESET, the icon shall become solid red.
7. The duress situation will only be canceled once the man-down button has been deactivated and the Touchscreen has RESET the alarm condition. Multiple duress stations must be individually RESET.

PART 2 – PRODUCTS

2.1 EQUIPMENT AND MATERIALS

A. Ultrasonic Duress Receivers: Provide Perimeter Products, PAR03RM duress receiver for interior locations and PAR03RM/WPH for exterior locations where “Ultrasonic Duress Receiver” is indicated on the Drawings; or approved equal.

B. Ultrasonic Transmitters: Provide twenty-five (50) Perimeter Products, PAT/MD duress transmitters; or approved equal.

C. Duress Station, Under Counter: Provide Ademco #269, shrouded, key re-settable, under-counter mount duress pushbutton.

D. Provide IFS or Fiber Options fiber modems to allow seamless control from the MSC Touchscreen; including but not limited to Sallyport Door Control, Intercom, and Camera Call-up. Provide a wall mounted enclosure for the fiber modems to be mounted in the existing building, coordinate location with owner. Provide fiber modems necessary to provide data logging and audio logging on the SMS computer.

PART 3 – EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field testing and inspection will be performed under the provisions of Section 17000.

B. Replace equipment, components, and wiring as required to achieve a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, programming, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.

B. Schedule training with Owner through the Owner's Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner's Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17400

SECTION 17500

AUXILIARY CONTROL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for an Auxiliary Control System, which is an integral part of the Security Automation System.

Auxiliary control system features included are:
1. Remote control of cell and dayroom lighting.
2. Remote control of television receptacles.
3. Remote control of inmate phone power.

B. Provide all labor, equipment, materials, and supervision to install, program, calibrate, adjust, document, and test the total system as required herein.

1.2 SYSTEM DESCRIPTION

A. Provide a fully integrated, yet separate PLC-based system, which allows the remote control of auxiliary systems of the facility. Each UCP location shall have an independent PLC CPU for control of the utility system.

PART 2 - PRODUCTS

2.1 SOFTWARE REQUIREMENTS

The Auxiliary Control System shall have the following software requirements to allow for seamless control and future flexibility.

A. Fail Safe configuration: upon loss of power to the auxiliary system or failure of the PLC remote I/O, the system shall change state to the safest condition for the facility staff.
1. Lighting relays shall fail closed to allow lighting to be on, if lighting circuit is powered.
2. Receptacle relays shall fail open keeping staff safe from electric shock.

2.2 SYSTEM FEATURES

A. Provide group or individual cell lighting control as called out on the plans.

B. Configure the system to automatically turn on lights, which are controlled in an area from which a duress signal has been received.

C. Configure the system to automatically turn on lights, which are controlled in an area which has received a fire zone alarm.

D. Configure the system to automatically turn on all controlled lights when an emergency evacuation has been initiated.

2.3 EQUIPMENT AND MATERIALS

A. Lighting, Receptacle, Phone power contactors
   1. Provide control contactors, which will be rated at 30 amps for 208/277 VAC power circuits. Relay type will be selected by the integrator to meet codes and specific load requirements.
   2. Approved: Allen Bradley 700 series or Magnacraft equivalent

B. Lighting, Receptacle, Phone power contactor Enclosures
   1. Provide wall mounted Nema 12 enclosure(s) with subplates to house all contactors and PLC remote I/O. Coordinate location with EC to be located near breaker panels.
   2. Approved: Hoffman

PART 3 – EXECUTION

3.1 QUALITY ASSURANCE

A. Quality Assurance shall be as described in Section 17000.

3.2 EXAMINATION

A. Verify that surfaces and areas are ready to receive work.

B. Verify field measurements are as shown on drawings and as instructed by manufacturer.

C. Verify that required utilities are available, in proper location, and ready for use.

3.3 INSTALLATION

A. Field-testing and inspection will be performed under the provisions of Section 17000.

B. Provide equipment, components, and wiring as required to achieve a fully functional system.

3.4 DEMONSTRATION, TRAINING, AND ACCEPTANCE

A. Demonstration, training, and acceptance shall be as described in Section 17000.

3.5 COMMISSIONING

A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours training.

B. Schedule training with Owner through the Owner’s Project Manager, with at least seven days advance notice.

C. Occupancy Adjustments: When requested by the Owner’s Project Manager within one year of date of Substantial Completion, provide on-site assistance in adjusting levels, and adjusting controls to suit actual occupied conditions.

END OF SECTION 17500

SECTION 17900

SECURITY MANAGEMENT SERVER

PART - GENERAL

1.1 SUMMARY

A. This section includes the requirements and operational characteristics for Security Management Server System comprised of the following equipment that is 100% integrated with the Security Automation System:

B. Related Sections: The following sections contain requirements that relate to this section:
   1. Division 16 Section "Basic Electrical Requirements."
   2. Division 17: All sections of the "Security Automation System"

1.2 SYSTEM DESCRIPTION

A. The SMS data recording engine shall log security commands made within the detention facility as they happen. Provide facility administrators the ability to monitor and review all operational aspects of the Security Automation System and its operations. The intent is that by recording all actions of the system, it shall provide Owner with greater liability protection and accountability.

1.3 SOFTWARE REQUIREMENTS

The Security Management Server (SMS) System shall have the following software requirements to allow for seamless control and future flexibility.

A. Data Logging
   1. The integrator shall provide a SMS system with a single point for logging, recording, report generation and backup. Distributed databases are not acceptable.
   2. The SMS shall be capable of processing 100,000 transactions per day (minimum).
   3. The SMS shall be capable of communication to multiple PLCs over Ethernet.

B. Audio Logging
   1. The SMS shall have the ability to record the audio conversations from each control station simultaneously to the SMS hard disk as a WAV or MP3.
   2. Each audio recording shall include; Time/Date, Touchscreen user, Touchscreen station, and field intercom station.
   3. The transaction log shall provide an automated link for every intercom call for the officer to recall the audio clip. The SMS shall replay the audio file without preventing or degrading any data logging function or live audio clips from being recorded.
   4. Provide Play, Stop, Pause, Fast Forward and Reverse functions for audio playback.
   5. Provide hard disk space on the SMS sufficient to record telephone quality (8 bit, 11 kHz minimum) for 500 channel-hours (one channel per Touchscreen) of audio online. Provide the ability to save an audio file to separate media for long-term storage.
   6. Provide audio playback ability to the subnet for Administration Viewing & Retrieval PCs as defined in section 17020.

PART 2 - PRODUCTS

2.1 SYSTEM FEATURES

A. The Security Management Server (SMS) performs several valuable functions, but is not an essential component of any operational control system. It shall be configured as follows:
   1. The SMS is an IBM type personal computer connected via Ethernet to the PLC controller.
   2. The SMS receives alarm and transactions from the PLC within 500 milliseconds of the occurrence. The SMS shall record Time/Date, Device, Device Action, and user the name of the user performing the action for all transactions and alarms.
      Transactions & Alarms include, but are not limited to:
      a. The SMS shall record to disk all door openings, closings, unlocking, re-locking, secure actions, door position, lock status, violations, violation silencing, violation resetting, interlock violations, and resetting of interlock violations.
      b. ISOLATED doors are reported by the SMS during daily reports. Changing the state of ISOLATED doors is recorded to disk by the SMS.
      c. Doors with LOCAL ACCESS granted are reported by the SMS during daily reports. Changing the state of LOCAL ACCESS doors is recorded to disk by the SMS.
      d. All interlock override activities.
      e. The SMS records any intercom call activity, including when the call was placed and answered.
      f. Every intercom pushbutton press.
      g. All communications ISOLATE activities.
      h. All Touchscreen functions.
      i. All Misc. system functions.
      j. All duress activities.
      k. All video activities.
      l. All utilities activities.
      m. All PLC system faults.
      n. All Touchscreen login/logout activities.
      o. All Touchscreen Occurrence Log transactions.
   3. All transactions (action codes), alarms and status are continually outputted from the PLC. The PLC shall be able to service this data management activity and continually control all other devices specified elsewhere in this specification without any additional delay in system throughput.
   4. The SMS will provide preventative maintenance functions by continually counting operations of all devices.

B. The SMS operates in a MICROSOFT WINDOWS environment and provides the following features:
   1. The SMS shall be capable of recording all events of all stations and panels.
   2. Transactions sent to screen, disk or printer are time and date stamped. Line by line printing shall contain line numbers, such that physical cutting and pasting is impossible. Any printed reports shall also contain this protection.
   3. Provide a Microsoft compliant database for storage of system transactions as well as BLOB's (binary large objects like audio and video files).
   4. Provide password protection to prevent modifications to the database system.
   5. All reports/searches shall take less than five minutes to generate for the most intensive retrieval.
   6. The database shall be able to contain up to 5 million transactions prior to the need to archive data. The system shall allow the user to perform backups in 600MB sections to facilitate backup to CD-RW. Archived data shall be viewable, in an identical format as the original SMS, from the CD without the need to install any additional software. All data on the CD shall be able to be sorted, searched, reports generated and

printed directly from the CD.

7. The system shall notify the user when the transaction register is 85% of the maximum to allow for data archival. If the database reaches it maximum, logging will not be affected. Instead, an automated deletion of the oldest 600MB of data will be purged to allow new data to be saved.
8. The database reports shall include the option to export the data to a comma-separated file (.csv) to be used by owner provided software.

C. The SMS will include a complete comprehensive relational database report utility, accessible via a pull down menu. All reports are titled, time and data stamped, and contain anti-cut and paste line numbering. It shall be possible to easily select reports to show the history of any device or group of devices between specified times and dates.
   1. The DAILY REPORT will print to screen or paper the list of states during the day by event occurrence of all controlled devices, alarms, isolations and conditions. The report is programmable to the desires of the owner. Consultation with the Owner during the training period will determine the content of this report.
   2. The HISTORICAL REPORT allows the operator to select any and all transaction types, alarms, watchtour, time changes and any other system functions as described in the specifications, and is done by defining a start date and time and a stop date and time. The computer will search any applicable matching occurrences and print either to the screen or printer as a report; thus allowing searching for:
      a. Specific time periods
      b. Specific transaction types
      c. Specific locations
      d. Any combination of the above
      e. Specific keywords

D. SMS Client:
   1. Provide client software, which will be provided for the Owner to install on up to 5 Owner-supplied PCs to allow the viewing of all transactions, generate reports, playback audio, and allow search capabilities. Connection to SMS will be over a dedicated Ethernet connection from the SMS computer to the Owner-supplied PCs on the Security Automation System secure intranet.
   2. Provide the ability for clients to backup/archive the event log database, to view data from any archived database, including CD-ROMs, and export reports to a .csv format.
   3. Provide ability to add, delete, and modify users for the Touchscreen login validation.
   4. Provide the ability to assign users access to specific Touchscreen stations.
   5. Provide a fully integrated, Windows based, on-line help system.
   6. Provide a fully integrated Web based client, which shall allow access to the SMS database, through password protection, via a commercially available browser application. The Web based client shall allow the viewing of all transactions, generate all reports, playback transaction audio MP3 files, allow searches and printing to local printers.

2.2 EQUIPMENT AND MATERIALS

A. Hardware configuration
   1. The SMS processor shall be at least an Intel Pentium IV, 2.8GHz.
   2. Operator interface shall be controlled by Microsoft Windows 2000 with lockout of all other functions except by special keystroke and password access.
   3. Provide an enhanced 101 key keyboard.
   4. Provide a 17" SVGA monitor.
   5. Provide an optical wheel mouse.
   6. Provide 512 Megabytes of SDRAM.
   7. Provide a 40GB hard drive or greater to provide specified storage.
   8. Provide a 1.44 Megabyte floppy disk.
   9. Provide a 600DPI HP Laserjet printer.

10. Provide sufficient serial ports.
11. Provide a 48x/24x/48x CD-RW drive.
12. Provide two 100BaseT NICs.
13. Provide a Pelco LB2000 lock box.

PART 3 - EXECUTION

3.1 QUALITY CONTROL

A. The SMS shall be a product regularly produced for the detention market. The product must be successfully installed in at least 50 other facilities prior to award of this contract.

3.2 COMMISSIONING

A. Train Owner's personnel in the full operation of the system. Provide a minimum of 4 hours of training.

END OF SECTION 17900